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September 24, 1998

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

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BY HAND DELIVERY

Ms. Magalie Salas
Secretary
Federal Communications Commission
1919 M Street, N.W.
Washington, D.C. 20554

**Re: Sensormatic Electronics Corporation's Reply Comments,
Notice of Inquiry, ET Docket No. 98-80, FCC 98-102, Released
June 8, 1998**

Dear Ms. Salas:

On September 23, 1998, this firm submitted Reply Comments on behalf of Sensormatic Electronics Corporation ("Sensormatic") in the above-referenced proceeding. The statement of Donald J. Umbdenstock of Sensormatic (the "Statement") submitted with these Reply Comments contained Mr. Umbdenstock's facsimile signature. Accordingly, I am enclosing herewith the Statement bearing Mr. Umbdenstock's original signature.

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LEVENTHAL, SENTER & LERMAN P.L.L.C.


Office of the Secretary

September 24, 1998

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If there are any questions regarding this matter, please contact the undersigned.

Sincerely,

A handwritten signature in cursive script, appearing to read "Christopher J. Sova".

Christopher J. Sova

ET Docket No 98-80

**1998 Biennial Regulatory Review --
Conducted Emissions Limits Below 30 MHz
for Equipment Regulated Under Parts 15
and 18 of the Commission's Rules.**

Reply Comments, Sensormatic Electronics Corporation

The undersigned has reviewed comments filed in the above-captioned proceeding, particularly those filed on July 22, 1998 by General Electric Company ("GE"), and offers the following responsive comments.

According to GE, some RF lighting products operate over the frequency range of 25 kHz through 100 kHz. GE Comments at 3. GE further states that "in commercial applications, it is not typically expected that users would expect to receive services in the less than 30 MHz range". GE Comments at 6. GE also states that "lighting fixtures in commercial installations are usually grounded and in metal housings, which provides [an] attenuation mechanism for the RF lighting devices themselves". GE Comments at 6. Finally, GE claims that there "has never been a history of interference below 450 kHz", concluding that there is no justification for additional regulations. GE Comments at 8.

A number of security systems have transmitters operating in the frequency range of less than 30 MHz, including in the range of 25 kHz through 100 kHz. Sensormatic has set up RF lighting systems in our product development lab and established that RF lighting systems cause interference and degradation to security systems. We have also measured the effects of RF lighting systems in shopping malls and established that interference occurs at distances up to 30 meters from the lighting source -- not likely to

be directly from the radiating source of the bulb and driving circuit. The interference occurs when the RF lighting systems operate on the same frequency or generate harmonics on the same frequency as the security system's operating frequency. If the Commission would like further information regarding the testing, it should feel free to contact the undersigned.

RF lighting systems are becoming more common due to improved energy efficiencies; at the same time security systems have become common place -- with hundreds of thousands of security systems installed. The installed base of security systems is in jeopardy due to new unregulated interference sources being introduced. Therefore, conducted emission limits for RF lighting systems for frequencies below 450 kHz should be considered.

The RF lighting systems also interfere with security systems directly from radiated emissions from the magnetic loop formed by the bulb and driving circuit. Although this problem of direct radiation is not within the explicit scope of this inquiry, it is relevant to the extent that manufacturers of RF lighting systems claim that their products cause no interference in this frequency range.

GE commented on the benefit of metallic enclosures associated with RF lighting. It is a benefit that RF lighting is typically enclosed in metal enclosures, but unless it is mandatory, it cannot be identified as a means of further attenuation of offending signals. If it is not a requirement, a manufacturer is not obligated to use this approach. There is nothing to prevent a manufacturer from later using a non-metallic enclosure. Thus the argument of attenuated emissions is negated.

In addition to GE's comments, Silicon Graphics, Inc., identified a 12 Volt halogen lamp bulb and an "electronic" transformer that caused interference at 51 kHz. Silicon Graphics Comments at 1. This is

further indication that lighting devices operating below 450 kHz do cause significant interference.

When such a product happens to operate on a security system's operating frequency, degradation will occur.

As recognized in the NOI and various comments, building wiring can act as an effective radiator of RF energy. The source can originate as an unintended conducted emission such as RF lighting or as an intended conducted emission such as power line carrier. The end result is the same -- an emission is connected to an "antenna" (the building wiring) and creates radiated interference, degrading system performance. Again, Sensormatic urges the Commission to consider conducted emission limits for commercial and industrial products with limits set for frequencies below 450 kHz, perhaps as a Part 18 amendment. This band should be applied to any product that produces significant emissions in the frequency range of 10 kHz to 30 MHz, whether it be for RF lighting devices, the Variable Frequency Drives identified in Sensormatic's original comments, power line carrier systems, or any other commercial product with significant emissions above 9 kHz.

A handwritten signature in black ink, appearing to read "Donald J. Umbdenstock", written over a horizontal line.

Donald J. Umbdenstock

Project Leader, Corporate Compliance
Sensormatic Electronics Corporation

September 22, 1998